

WHAT IS CLAIMED IS:

1. A wafer planarization system comprising:  
an electrical source having a first electrode and a second electrode;  
a polishing pad carrier connected to said first electrode;  
a workpiece carrier connected to said second electrode;  
a conditioning tool comprising an abrasive surface adapted to condition said polishing pad; and  
an electrical insulator configured to isolate said abrasive surface from at least one of said first electrode and said second electrode.
2. The system of claim 1 wherein said conditioning tool comprises said electrical insulator.
3. The system of claim 2 wherein said wafer planarization system is an electro-chemical planarization system, said first electrode is a cathode, and said second electrode is an anode.
4. The system of claim 2 wherein said conditioning tool further comprises an electrically insulated conditioning disk comprising said abrasive surface and a substrate proximate said abrasive surface.
5. The system of claim 4 wherein said conditioning disk further comprises a carrier affixed to said substrate.
6. The system of claim 5 wherein said carrier is an electrical insulator.
7. The system of claim 6 wherein said carrier is formed from polycarbonate.
8. The system of claim 4 wherein said substrate is conductive.
9. The system of claim 8 wherein said substrate comprises nickel.

10. The system of claim 9 wherein said abrasive surface comprises a plurality of abrasive particles affixed to said substrate with a metal matrix.

11. The system of claim 10 wherein said abrasive particles comprise diamonds.

12. The system of claim 10 wherein said metal matrix comprises nickel.

13. A method of conditioning an electrochemical-mechanical polishing pad comprising:

electrically insulating an abrasive surface of a conditioning tool;  
contacting said abrasive surface with said polishing pad; and  
moving said abrasive surface relative to said polishing pad.

14. The method of claim 13 wherein said conditioning tool further comprises an electrically insulated conditioning disk comprising a substrate proximate said abrasive surface and a carrier affixed to said substrate.

15. The method of claim 14 wherein said carrier is an electrical insulator.

16. The method of claim 15 wherein said carrier is formed from polycarbonate.

17. A method of planarizing a first side of a workpiece comprising:  
providing a moving polishing pad;  
contacting said first side of said workpiece with said polishing pad;  
flowing an electrical current through said first side of said workpiece;  
providing an abrasive surface of a conditioning tool that is electrically insulated from said electrical current; and  
contacting said abrasive surface with said polishing pad.

18. The method of claim 17 wherein said conditioning tool comprises an electrically insulated conditioning disk comprising a substrate proximate said abrasive surface and a carrier affixed to said substrate.

19. The method of claim 18 wherein said carrier is an electrical insulator.

20. The method of claim 19 wherein said carrier is formed from polycarbonate.